

# PULLING THE *FUTURE FORWARD*

ABOUT  
PSCR

5 KEY  
RESEARCH AREAS

RESEARCH  
FACILITIES

RESEARCH  
PARTNERS

INTRAMURAL  
IMPACTS

EXTRAMURAL  
IMPACTS

The Public Safety Communications Research (PSCR) Division is the primary federal laboratory conducting research, development, testing, and evaluation for public safety communications technologies. It is housed within the Communications Technology Laboratory (CTL) at the National Institute of Standards and Technology (NIST). It addresses the R&D necessary for critical features identified by public safety entities beyond the current generation of broadband technology.

## MISSION

PSCR is driven towards advancing public safety communications technologies by accelerating the adoption and implementation of the most critical communications capabilities to ensure the public safety community can more effectively carry out their mission to protect lives and property during day-to-day operations, large scale events, and emergencies.

## PROMISE

PSCR accelerates innovation by investing in research to transform the future of public safety communications, technology, and operations.

# PULLING THE *FUTURE FORWARD*

ABOUT  
PSCR

5 KEY  
RESEARCH AREAS

RESEARCH  
FACILITIES

RESEARCH  
PARTNERS

INTRAMURAL  
IMPACTS

EXTRAMURAL  
IMPACTS

USER INTERFACE  
USER EXPERIENCE



LOCATION-BASED  
SERVICES



MISSION CRITICAL  
VOICE



SECURITY



UNCREWED  
AIRCRAFT SYSTEMS



# PULLING THE *FUTURE FORWARD*

ABOUT  
PSCR

5 KEY  
RESEARCH AREAS

RESEARCH  
FACILITIES

RESEARCH  
PARTNERS

INTRAMURAL  
IMPACTS

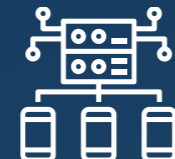
EXTRAMURAL  
IMPACTS

## RESEARCH FACILITIES

### Public Safety Innovation Lab



40-Gigabit  
Core LTE  
Network



P25 Phase 1 & 2  
LMR System



2 RF Chambers  
for Testing  
Devices



Interoperability Lab  
Interconnecting LMR  
and LTE Systems

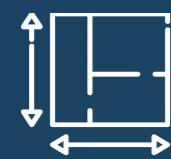


Virtual and  
Augmented  
Reality Lab



Mobile Research  
Vehicle for Field  
Measurements

### Public Safety Immersive Test Center



A Modular  
Layout



A Motion Capture System with 62 High  
Speed Optical Tracking Cameras  
Capable of Centimeter Accuracy



A Variety of Augmented  
& Virtual Reality  
Headsets



A Mobile Staircase &  
Other Equipment for  
Z-Axis Motion



Physical Furniture and  
Gear to Add a Tactile  
Component to Simulations

# PULLING THE *FUTURE FORWARD*

ABOUT  
PSCR

5 KEY  
RESEARCH AREAS

RESEARCH  
FACILITIES

RESEARCH  
PARTNERS

INTRAMURAL  
IMPACTS

EXTRAMURAL  
IMPACTS



# PULLING THE *FUTURE FORWARD*

ABOUT  
PSCR

5 KEY  
RESEARCH AREAS

RESEARCH  
FACILITIES

RESEARCH  
PARTNERS

INTRAMURAL  
IMPACTS

EXTRAMURAL  
IMPACTS

## PRODUCTS

### Measurement Method Metrics



MCV Quality Of  
Experience



Public Safety  
Push-To-Talk  
Modeling



XR Test Bed  
for Usability



Public Safety  
Analytics  
Open Framework



Indoor  
Localization  
Accuracy

### Research Tools



**25** Open Source  
Software



**114** Internal  
Publications

### Standards

**LTE**

483 Contributions for Public  
Safety Service & Feature  
Requirements, Architecture,  
& Protocol Specifications

**LMR  
to LTE**

Initiated Many 3GPP Standards-  
based LMR to LTE Interfaces for  
Public Safety

## REACH

### Hosted Events

More than  
**108** Stakeholder Engagements  
Since 2016

### Lab Visitors

More than  
**2750** On-site and Virtual  
Visitors Since 2016

## STAFF

**39** Staff Members Working  
on PSCR's Mission

# PULLING THE *FUTURE FORWARD*

ABOUT  
PSCR

5 KEY  
RESEARCH AREAS

RESEARCH  
FACILITIES

RESEARCH  
PARTNERS

INTRAMURAL  
IMPACTS

EXTRAMURAL  
IMPACTS

## EXTRAMURAL RESEARCH

### Grants and Cooperative agreements



**\$108M**

In Grants  
Awarded to Date



**262**

Total Award Recipients,  
Subcontractors, and Public  
Safety Practitioners



**200+**

External Software Resources



**7**

Patents  
Granted



**13**

Patent  
Applications  
Submitted

### Open Innovation



Winners from  
**31 STATES**  
&  
**7 COUNTRIES**



**21**  
Challenges  
Launched



**274**  
Winning  
Teams



**\$7M+**  
In Prizes  
Awarded  
To Date



**734**  
Prizes  
Awarded



**1,035**  
Total  
Submissions

## Commercialization Highlights

**26** public safety organizations involved in commercialization efforts

**20** funding opportunities with public safety demonstrations and pilot projects

**10** agencies that provided SBIR follow-on funding to commercialization program participants

## Research Publications

**300+**

External Journal and Conference  
Publications